

AUTOMOTIVE
SECTION

BUS NOW SPELLS DOOM OF STREET CAR

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To Doom of Surface
Street Cars in Cities

Success of Chicago and New York Companies Shows That Universal Use of Automotive Vehicles Is Becoming Inevitable.

By D. C. FENNER.

Mgr. Public Works Dept., International (Mack) Motor Co.

Out of the problems of increasing traffic congestion in large cities, has come a new understanding of the convenience and economies offered by the motor bus. Its acceptance has doomed older forms of transportation just as the surface cars, in their turn, succeeded the horse cars and stage coaches.

In Boston, the Eastern Massachusetts Street Railway Company, operating in the Lawrence district, is charging a 10-cent fare, while buses in competition transport passengers on the same route for 5 cents. The railway company notified public officials that unless measures were adopted to restrict motor bus competition, their service would be discontinued. Their statement says that the time

having already traveled a distance of more than 40,000,000 miles.

In the words of Mayor Hylan, "The day of the street surface cars has gone forever, and it will not be long before New York will have trackless streets."

In one year, ended October 31, 1919, the Chicago Motor Bus Company carried in its buses of fifty-one passenger capacity, 4,106,208 persons on 58,027 round trips. This represents an increase from a daily average of 2,229 passengers in 1917 to 78,965 in 1919. This company has recently introduced a new type of bus with enclosed seats on top that will accommodate sixty passengers.

Operating Methods.

Although the universal use of motor buses for passenger transportation is apparently inevitable, their success depends entirely upon certain elements of organization and operating methods. Bus operators of the present and of the future may well profit by the experiences of the so-called jitney lines that have failed through loose organization and cut-throat methods of competition. The majority of these lines were operated by ex-chauffeurs and teamsters, who, because of the liberal credit extended by truck dealers, could do business with very little capital.

Lines Shut Down.

Several cross-town surface car lines in New York city shut down because they could not operate profitably on a 5-cent fare basis. Buses, under municipal control, took their place, gave the public quicker and more satisfactory service for the same fare, and did it profitably. The buses of the Fifth Avenue Coach Company have met with phenomenal success.

Successful operators know that expenses involving the following items must be taken into consideration:

Fixed charges—Amortization (reserve for depreciation), interest on investment, insurance, fire, transportation and theft, public liability and property damage, collision, overhead, administration requirements, taxes, licenses.

Low Rates Charged.

The low rates charged by uniformed operators imperil the business of those who know their costs. Although the informed operator knows that his competitors are losing money and will sooner or later be forced to give up their business because they cannot lower their own rates. For this reason, franchises should be given only when there is assurance that the operator has made a careful study of the undertaking.

An interesting analysis of the costs of the public bus operation was made recently in New York city by the commissioner of plant and structures to the board of estimate. The proposal was for a permanent mu-

MONTHLY REPORT									
Driver					Route				
Day	Miles	Gasoline	Oil	Driver	Month	Maintenance	Revenue		
		Gals. Amt.	Qts. Amt.	Driving		Labor	Stores	Chg. Fares	Cash Fares
1									
2									
3									
4									
5									
6									
7									
etc.									

SUMMARY:

Parrell:
Spares:
Depreciation:
Tires:

Insurance:
Garage:
Misc.:
TOTAL:

UNIT:

nicipally operated system of bus lines and shows that 100 buses operating on a 5-cent fare basis can be made to pay a profit of \$370.80 a day.

The cost of 100 buses is figured at \$550,000, spare parts at \$10,000, and garage equipment at \$10,000, a total investment of \$570,000. For maintenance the estimate provides \$655,000 yearly, covering liability at \$500 per bus, garage cost at \$250 per bus, and 180 chauffeurs at \$1,800 a year.

30 Per Cent Depreciation.

Depreciation is figured at 30 per cent a year on buses and 70 per cent on equipment. These items, together with provisions for a superintendent, starters and checkers, totals \$17.40 per day for each bus.

For running cost, 4 cents a mile is allowed for gasoline and oil, 6 1/2 cents for tires, and 1 1/2 cents for repairs, a total of 12 cents per mile. The plan contemplates the operation of 22 buses, 8 being kept for breakdown service.

At an average of 80 miles a day per bus, the total "bus miles per day" will be 1,760, which, with the fixed charges, brings the total cost of operation to \$2,623.20. At the conservative estimate of 60,000 5-cent fares, or a total revenue of \$3,000 a day, the net daily profits are figured at \$376.80. The estimate does not include interest on the investment, insurance, other than liability, or State motor vehicle license fees.

Charges and Costs.

Maintenance charges—Garage rent, heat, light power, etc., repairs, material and labor, overhauling, painting, wrecking crew and equipment, mechanics and inspectors, battery renewal and charging.

Running costs—Gasoline, oil, tires, wages of drivers, dispatchers, superintendents, etc., grease, kerosene and waste.

To calculate unit costs on which rates may be based, it is necessary to secure a report from each driver at regular intervals, covering the above items. A simple yet flexible form of monthly report is that used by the Suburban Transit Company of Plainfield, N. J., shown on this page. This company operates a fleet of thirteen Mack buses in the vicinity of Plainfield, and maintains a thoroughly up-to-date garage with storage and repair facilities.



Ignition Trouble.

Somehow or other the average mechanic or owner jumps to the conclusion the carburetor is causing all the trouble in an ill-running car, and it is common practice immediately to set to work to change the adjustment or try to remedy some other and quite foreign ill.

For years we have been told by the carburetor makers to leave this part of the motor car outfit alone; that not once in a thousand times is it to be blamed; that it cannot materially change unless the float becomes pun-

tured. Yet we keep on tinkering with the gas-making device and pass a lot of other things that ought to be taken into consideration when something goes wrong with the perfect workings of the engine.

Despite the fact that I know every nut and bolt on my car, notwithstanding that my engine had never up to a couple of weeks ago "acted" up on the road, and with the full knowledge that in my particular carburetor there was absolutely nothing that could get out of order and nothing of any nature to adjust, I did as they all do—accused the carburetor.

Makers Baffled.

In a sense I had a right to do so inasmuch as I had spent three afternoons cleaning, going over and fixing everything I could bring to mind. Even the carburetor makers were a little baffled over the fact that at a certain speed the engine would "loam" yet would give splendid results at other speeds and at all times.

There had never been trouble about starting, there was no vacuum tank and its long pipes to cause trouble about the gasoline feeding for the tank happened to be developed—yet, trouble came after all this work and all the precision through which I went preparatory to an extended country trip.

Always has been my play to do my tinkering before I start out rather than spend time fussing on the road and in all cases this policy has worked out to perfection with this one exception. I wished then I had never cleaned the old car.

Missed After 15 Miles.

Practically all of Saturday, much of Sunday, and the entire forenoon of a Monday I worked on the car to have it in a condition that would put it over the road for a hard week's drive and could not one forced step unless it happened to be for tire trouble.

Starting out the engine performed splendidly, but it had not gone fifteen miles before it developed a decided missing when ascending the slightest grade on a concrete road; and when it tackled a real little hill that should have been made on high it was all it could do to make the top on low and that accompanied with incessant backfiring, something almost unknown to that particular machine.

After that it ran better. It seemed much like a lack of gas; that was the symptom in every way. It seemed for all the world like a stoppage of the gasoline at the screen or in the spray nozzle, yet inasmuch as it was working I stuck to my policy of letting it alone until I could reach my garage.

Changed for Worse.

It might have gone all the way home had I kept it moving, but I didn't; I stopped to visit a friend who had a home in a new subdivision and who was blessed with a graded dirt road leading to his house. It was all right going to the house, but after a gentle touch of the clutch, strange things happened. The engine had changed decidedly—for the worse.

The engine started and that is all; it wouldn't move forward in low gear and the engine would stop with even a gentle touch of the clutch. Strange to say it would run backward, and not forward, due no doubt, as I see it now, to the lower gear ratio.

Then when a set spot was reached it quit entirely and refused to have a

word to say. That meant there was no gas coming through the feed pipe or that the screen was stopped or something of the sort, but it happened that there was no trouble there.

It didn't seem possible that it could be the magneto, for that had been gone over in the morning—the brushes had been cleaned, the high-tension segments were wiped off and were as good as the day the instrument was made; every plug was cleaned and the points set; the wires had been tested and the terminal set up and cleaned—all the ignition was perfect. Yet not a kick out of that engine.

When priming would bring no hint of an attempt to start I knew it must be ignition, unless the chain operating the camshaft had slipped, and I tell the truth it did look like something of the sort. But I checked up on the valve setting and valve action and that was according to the fly-wheel marks and there was clearance and all that.

"Leading" Disappeared.

Removing the cover to the magneto, I started in and checked up on the breaker, finding this to be according to rule and working perfectly when the engine was turned over by the starter.

But I did find a film of carbon on the fiber insulating the high-tension segments, despite the fact that I had so carefully cleaned that very portion, as well as the distributing brush in the morning. I cleaned it thoroughly, put back the cover and the engine started instantly and ran better than it has in months.

It was all my own foolishness, as I realized afterward, for I had given the fiber and segments the thinnest trace of lubricating oil that was possible and this had only acted as a

distributor of carbon, permitting the high-tension current to run wild and go anywhere but the right place.

Then I found that the "leading" at a certain engine speed disappeared and the car could move along on high gear slower than ever; that I improved my mileage by 2 m.p.g.; that there was no sign of laboring and no hesitancy, and that altogether the gine worked better than it had in a year.

Chiefly, however, I discovered that it is not well to lay the blame to the carburetor and I also discovered the fact that oil must be kept off the high-tension distributor on a magneto.

—C. P. R., in Motor Age.

BATTERY SERVICE CO.
WILL OPEN BRANCHES

The many hundreds of Washington motorists who have, during the past year, employed the Federal Battery Service at the company's local station, 1525 Seventh street northwest, should be interested to know that the company plans to establish as quickly as possible a national chain of seventy or more branches to be located in all of the more important cities in the country.

They say the service to be rendered by these stations will be standardized as to price and quality. A full line of automobile accessories will be carried in each branch, making the organization a complete national service. The company announces that its first branch outside of Washington was opened for business on the fifteenth, through the acquisition, by purchase of the entire assets of the Auto Service Company at 1624 Venango street, Philadelphia, where Federal Battery Service may now be had under the supervision of the company's experts.

It is expected that announcement will be shortly made of the opening of the company's Baltimore branch, plans for which are well advanced. The remaining branches planned for

will be opened as rapidly as locations can be obtained, experienced and well trained men placed in charge thereof, and the exigencies incident to the handling of such a large organization complied with.

The company is organized and operated along co-operative lines, its preferred stock being held by its customers, only one share of stock being sold to any one customer. The preferred stockholders are given privileges in the way of discounts upon all purchases made at any of the company's branches that save a great many dollars in the course of a year upon all accessories, including tires, batteries, etc., that they have to buy.

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